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Notice of Allowability

Application No.

10/532,655

Examiner

Huedung Cao Mancuso

Applicant(s)

THEVENOT ET AL.

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to declaration, filed on 12/28/05.
2. ☒ The allowed claim(s) is/are 12-22.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 04/25/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


TRINH DINH
PRIMARY EXAMINER

Examiner's Statement of Reasons for Allowance

1. Claims 12-22 are allowed.

2. The following is an examiner's statement of reasons for allowance:

The prior art made of record fails to anticipate or make obvious the claimed invention. Specifically, the prior art fails to teach, in combination with the remaining elements as recited in claim 12:

The present invention is directed to a system for transmitting and/or receiving electromagnetic waves.

Regarding claim 12, Prior Art fail to specifically teach that the antenna comprises: a photonic bandgap material designed to filter the electromagnetic waves spacewise and frequencywise, this photonic bandgap material having at least one bandgap and forming an outer surface radiating in transmit and/or receive mode, at least one periodicity defect of the photonic bandgap material so as to produce at least one narrow bandwidth within said at least one bandgap of this photonic bandgap material, and an excitation device for transmitting and/or receiving electromagnetic waves within said at least one narrow bandwidth produced by said at least one defect, this excitation device being designed to work simultaneously at least about a first and second separate working frequencies, the excitation device includes a first and a second excitation elements, separate from and independent of each other, each designed to transmit and/or receive electromagnetic waves, the first excitation element being designed to work at the first working frequency and the second excitation element being designed to

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work at the second working frequency, the or each periodicity defect of the photonic bandgap material forms a leaky resonating cavity presenting a constant height in a direction perpendicular to said radiating outer surface, and predefined lateral dimensions parallel to said radiating outer surface, the first and the second working frequencies are designed to excite the same resonance mode of a leaky resonant cavity, this resonance mode being established identically regardless of the lateral dimensions of the cavity, so as to create on said outer surface respectively a first and a second radiating spots, each of these radiating spots representing the origin of a beam of electromagnetic waves radiated in transmit and/or receive mode by the antenna, each of the radiating spots has a geometric center, the position of which depends on the position of the excitation element producing it and the area of which is greater than that of the radiating element producing it, and the first and the second excitation elements are placed relative to each other such that the first and the second radiating spots are positioned on the outer surface of the photonic bandgap material alongside each other and partially overlap.

Claims 13-22 are allowed for depending on claim 12.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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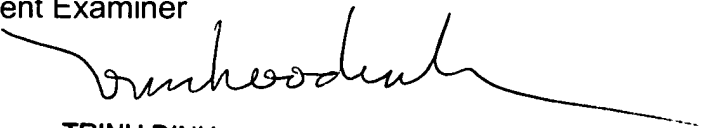
Inquires

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Mancuso whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

5. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Mancuso
Patent Examiner

A handwritten signature in black ink, appearing to read 'Trinh Dinh', with a long horizontal flourish extending to the right.

TRINH DINH
PRIMARY EXAMINER